

AMENDMENTS TO THE CLAIMS

1. (previously presented) A retrograde cannula for delivering fluid to a patient's vessel, the cannula comprising:

a body including proximal and distal ends and an infusion lumen extending therebetween for conducting pressurized fluid from a lumen inlet to a lumen outlet arrangement disposed adjacent the distal end for discharging fluid from the infusion lumen to a patient's vessel;

an automatically inflatable balloon extending around the body adjacent to, and spaced from, the lumen outlet arrangement, the balloon receivable in the vessel in a deflated state and being inflatable into sealing contact with a wall of the vessel, the body including a passage arrangement for fluidly communicating the balloon with the infusion lumen to enable the balloon to be inflated by the pressurized fluid being conducted through the infusion lumen and through the lumen outlet, wherein the passage arrangement constitutes the sole means of delivering inflation fluid to the balloon; and

a valve arranged in the body for being shifted between an open position to open the passage arrangement to communicate the balloon with the infusion lumen, and a closed position for closing the passage arrangement to block communication between the balloon and the infusion lumen and keep the balloon in its inflated state when the delivery of pressurized fluid is halted, the valve arranged to maintain fluid communication between the lumen inlet and the lumen outlet arrangement while in its open position and its closed position.

2. (withdrawn) The cannula according to claim 1 wherein the valve is manually shiftable between the open and closed positions.

3. (withdrawn) The cannula according to claim 1 wherein the passage arrangement comprises a plurality of passages.

4. (original) The cannula according to claim 1 wherein the body further includes a drain lumen arranged to interconnect the balloon with the infusion lumen independently of the passage arrangement, the drain lumen being openable and closable.

5. (previously presented) A retrograde cannula for delivering cardioplegia to a vessel of a heart, the cannula comprising:

a body including proximal and distal ends and an infusion lumen extending therebetween for conducting cardioplegia from a lumen inlet to a lumen outlet arrangement disposed adjacent the distal end for discharging cardioplegia from the infusion lumen to a patient's vessel;

an automatically inflatable balloon extending around the body adjacent to, and spaced from, the lumen outlet arrangement, the balloon receivable in the vessel in a deflated state and being inflatable into sealing contact with a wall of the vessel, the body including a passage arrangement for fluidly communicating the balloon with the infusion lumen to enable the balloon to be inflated by the pressurized cardioplegia being conducted through the infusion lumen and through the lumen outlet, wherein the passage arrangement constitutes the sole means of delivering inflation fluid to the balloon; and

passage opening and closing means for opening the passage arrangement to communicate the balloon with the infusion lumen, and for closing the passage arrangement to block communication between the balloon and the infusion lumen and keep the balloon in its inflated state when the delivery of cardioplegia is halted, the passage opening and closing means arranged to maintain fluid communication between the lumen inlet to the lumen outlet arrangement while in its passage-opening position and its passage-closing position.

6. (original) The cannula according to claim 5 wherein the body further includes a drain lumen arranged to interconnect the balloon with the infusion lumen

independently of the passage arrangement, the drain lumen being openable and closable.

Claims 7-17. (canceled)

18. (previously presented) The retrograde cannula according to claim 1 wherein the lumen outlet arrangement is non-valved.

19. (previously presented) The retrograde cannula according to claim 5 wherein the lumen outlet arrangement is non-valved.

20. (new) A cannula for delivering a fluid to a patient, comprising:
an inflatable balloon;

a cannula body including an infusion lumen with a lumen inlet at a proximal end and a lumen outlet at a distal end, said infusion lumen receiving said fluid under pressure at said proximal end and delivering said fluid to said distal end and into said patient via said lumen outlet, said cannula body having said inflatable balloon mounted thereon for engaging said patient; and

a valve coupled between said infusion lumen and said inflatable balloon for providing selectable fluid communication between said infusion lumen and said inflatable balloon wherein a portion of said fluid delivered to said distal end enters and inflates said inflatable balloon when said valve is open and said fluid is flowing through said infusion lumen, and wherein any fluid having passed into said inflatable balloon is trapped therein when said valve is closed regardless of fluid then flowing in said infusion lumen.

21. (new) The cannula according to claim 20 wherein said valve comprises a one-way valve for automatically opening when said fluid pressure in said infusion lumen is greater than fluid pressure in said inflatable balloon.

22. (new) The cannula according to claim 21 further comprising a drain lumen coupled to said inflatable balloon for selectably removing said fluid from said inflatable balloon.

23. (new) The cannula according to claim 20 wherein said valve comprises a manually-controlled two-way valve.